

**Patent**

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Serial No.: 10/618,689  
Filed: July 9, 2003  
Art Unit: 3677  
Examiner: David C. Reese  
Applicant: Robert L. Doubler et al.  
Title: PRECISE LINEAR FASTENER SYSTEM AND METHOD OF USE  
Attorney Docket: ZMS-G02US  
Confirmation No.: 8552

Cincinnati, Ohio 45202

July 21, 2006

Commissioner for Patents  
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**AMENDMENT**

In response to the Office Action mailed April 19, 2006, please amend the application as follows.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks** begin on page 9 of this paper.

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### AMENDMENTS TO THE CLAIMS

Please amend claims 1 and 2, and add new claim 26, as follows.

#### Listing of Claims

1. (CURRENTLY AMENDED) A precise linear fastener system comprising:
  - a collet member having a base end, a top end, an inner engaging surface, and an outer ribbed surface positioned about a central axis;
  - a compression ring member having a base end, a front end, an inner ribbed surface, and an outer surface positioned about a central axis;
  - said inner ribbed surface of said compression ring member being constructed and arranged for coaxial alignment and overlapping engagement with respect to said outer ribbed surface of said collet member, said compression ring member non-rotationally linearly traversable with respect to said outer ribbed surface of said collet member between a first release position and a second engaged position, wherein said engaged position results in said ~~ribbed surfaces~~ outer ribbed surface of said collet member and said inner ribbed surface of said compression ring compressing said collect member and tensilely loading said compression ring member to engage a shank member having an outer gripping surface, and wherein said release position results in expansion of said collet member thereby releasing said outer gripping surface of said shank member.

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2. (CURRENTLY AMENDED) The precise linear fastener system of claim 1 including a wherein said shank member having an outer gripping surface, includes a first end [[,]] and a second end.
3. (ORIGINAL) The precise linear fastener system of claim 1 wherein said ribbed outer surface of said collet member includes at least one outwardly and circumferentially extending rib, each said rib including a first ramp surface to facilitate coaxially aligned linear overlapping movement of said compression ring in relation to said collet member for engagement thereof, and a second ramp surface to facilitate linear removal of said compression ring from said collet member.
4. (ORIGINAL) The precise linear fastener system of claim 1 wherein said inner engaging surface of said collet member is constructed and arranged with a conjugate shape in relation to said outer gripping surface of said shank member.
5. (ORIGINAL) The precise linear fastener system of claim 1 wherein said inner engaging surface of said collet member is constructed and arranged with internal threads.
6. (WITHDRAWN) The precise linear fastener system of claim 1 wherein said inner engaging surface of said collet member is constructed and arranged with a knurled surface.

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7. (WITHDRAWN) The precise linear fastener system of claim 1 wherein said inner engaging surface of said collet member is constructed and arranged with a generally smooth surface.
8. (WITHDRAWN) The precise linear fastener system of claim 1 wherein said inner engaging surface of said collet member is constructed and arranged with at least one inwardly depending lip; wherein said inwardly depending lip is constructed and arranged with at least one tapered surface for cooperation with a conjugate tapered surface on said outer gripping surface of said shank member; wherein linear traversal of said compression ring member with respect to said axially aligned collet member compresses said collet member and tensilely loads said shank member.
9. (WITHDRAWN) The precise linear fastener system of claim 1 wherein said inner engaging surface of said collet member is constructed and arranged with at least one inwardly depending lip, wherein said inwardly depending lip is constructed and arranged for cooperation with at least one snap ring groove in said outer gripping surface of said shank member; wherein linear traversal of said compression ring member with respect to said axially aligned collet member compresses said collet member to engage said at least one snap ring groove.

10. (ORIGINAL) The precise linear fastener system of claim 1 wherein said first end of said shank member includes a tensioning means, said tensioning means being constructed and arranged to allow said shank member to be tensilely loaded prior to linear traversal of said compression ring member into said engagement position with respect to said collet member.

11. (WITHDRAWN) The precise linear fastener system of claim 10 wherein said shank member tensioning means includes at least two generally flat surfaces, wherein said at least two generally flat surfaces are constructed and arranged for gripping and placing a tensile load on said shank member prior to linear traversal of said compression ring member into said engagement position with respect to said collet member.

12. (WITHDRAWN) The precise linear fastener system of claim 10 wherein said shank member tensioning means includes at least one groove extending around the circumference of said first end of said shank member, wherein said at least one groove is constructed and arranged for gripping and placing a tensile load on said shank member prior to linear traversal of said compression ring member into said engagement position with respect to said collet member.

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13. (ORIGINAL) The precise linear fastener system of claim 10 wherein said shank member tensioning means includes at least one internal bore extending inwardly from said first end of said shank member along the longitudinal centerline of said shank member, wherein said at least one internal bore is constructed and arranged for gripping and placing a tensile load on said shank member prior to linear traversal of said compression ring member into said engagement position with respect to said collet member.

14. (ORIGINAL) The précis linear fastener system of claim 13 wherein said internal bore includes internal threads.

15. (WITHDRAWN) The precise linear fastener system of claim 13 wherein said internal bore includes at least one axially aligned groove extending around the circumference of aid internal bore.

16. (WITHDRAWN) The precise linear fastener system of claim 10 wherein said shank member tensioning meats includes a frangible stem, whereby said frangible stem is severed from said first end of said shank member when said first member reaches a predetermined tension prior to linear traversal of said compression ring member into said engagement position with respect to said collet member.

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17. (ORIGINAL) The precise linear fastener system of claim 1 wherein said outer ribbed surface of said collet member and said inner ribbed surface of said compression ring member are constructed and arranged to maintain an axially aligned interfitting relationship in said release position.

18. (WITHDRAWN) The precise linear fastener system of claim wherein said outer surface of said compression ring member includes at least two wrench flats for increasing or decreasing the said tension applied to said shank member subsequent to linear traversal of said compression ring member into said engagement position with respect to said collet member.

19. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of plastic.

20. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of copper.

21. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of brass.

22. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of bronze.

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23. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of aluminum.

24. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of steel.

25. (ORIGINAL) The precise linear fastener system of claim 1 wherein said collet member is constructed of rubber.

26. (NEW) A linear fastener system, comprising:

a collet member including an outer ribbed surface defining peaks and valleys, and an inner surface adapted to grip a corresponding surface of a shank in a locked condition of said fastener system;

a compression ring including an inner ribbed surface defining peaks and valleys corresponding to said peaks and valleys of said collet member;

the linear fastener system having a locked condition wherein said peaks of said collet member and said peaks of said compression ring are in confronting alignment, and an unlocked condition wherein said peaks of said collet member are disposed in said valleys of said compression ring.

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**REMARKS**

Claims 1-25 remain pending in the application. Claims 1-5, 10, 13, 14, 17 and 19-25 stand rejected, and claims 6-9, 11, 12, 15, 16 and 18 were withdrawn from consideration in view of a restriction requirement. Claims 1 and 2 have been amended herein, and new claim 26 has been added.

Applicants would like to thank the Examiner, David C. Reese, for the courtesies extending to Applicants' representative, David W. Dorton, during the personal interview on June 30, 2006. During the interview, the claims were discussed with respect to the references of record. Specifically, Applicants' representative indicated that the references of record did not teach or suggest a linear fastener system having a compression ring member that is non-rotationally linearly traversable with respect to the outer ribbed surface of a collet member. The Examiner indicated that amendments to the claims to more sharply define this feature would be given further consideration. The claims have been amended in accordance with the personal interview, and Applicants respectfully request reconsideration in view of the following remarks.

**Objections to the Claims**

Claims 1 and 2 were objected to for informalities related to claim language. Claims 1 and 2 have been amended herein as suggested by the Examiner. Accordingly, Applicants respectfully request that the objections to claims 1 and 2 be withdrawn.

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**Claims Rejected Under 35 U.S.C. §102**

Claims 1-5, 10 and 17 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 590,294 to Archer. Claims 1-5, 10, 13 and 17 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,162,234 to Freedland et al. Claims 1-5, 10, 13, 14 and 17 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3, 618,135 to Weller. Claim 1 is the only independent claim of this rejected group and has been amended herein to recite "said compression ring member non-rotationally linearly traversable with respect to said outer ribbed surface of said collet member."

Applicants respectfully assert that amended claim 1 is not taught or suggested by Archer '294 or Weller '135. Specifically, both Archer '294 and Weller '135 are directed to devices having screw-threaded components which can only be assembled by rotating at least one of the elements. Accordingly, neither Archer '294 nor Weller '135 teach or suggest a compression ring that is non-rotationally linearly traversable with respect to the outer ribbed surface of a collet member, as required by amended claim 1.

Applicants respectfully traverse the rejection of claim 1 with respect to Freedland '234 because Freedland '234 does not teach or suggest each and every element recited in claim 1. Specifically, Freedland '234 does not teach or suggest a compression ring having "an inner ribbed surface," as recited in claim 1. Rather, Freedland '234 is directed to an anchor system having a hoop portion 14 with a circumferential groove 141 that engages a flange 123 on a collet 12 to lock the hoop 14 to the collet 12. (See Freedland '234 at col. 16, lines 53-57.) For at least these reasons, Applicants

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respectfully assert that amended claim 1 is not taught or suggested by Archer '294, Freedland '234 or Weller '135, and Applicants respectfully request that the rejections of claim 1 based on these references be withdrawn.

Claims 2-5, 10, 13, 14, and 17 each depend from claim 1 and are therefore in condition for allowance for at least the same reasons stated above for claim 1. Accordingly, Applicants respectfully request that the rejections of claims 2-5, 10, 13, 14, and 17 be withdrawn.

### **Claims Rejected Under 35 U.S.C. §103**

Claims 19-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Archer '294, Freedland '234, or Weller '135. Claims 19-25 each depend from independent claim 1 and therefore include every feature recited in claim 1. Applicants respectfully assert that claims 19-25 are in condition for allowance for at least the reasons stated above with respect to claim 1 and request that the rejections of claims 19-25 based on Archer '294, Freedland '234 and Weller '135 be withdrawn.

### **New Claim**

New claim 26 has been added by the Amendment and is directed to a linear fastener system, comprising:

a collet member including an outer ribbed surface defining peaks and valleys, and an inner surface adapted to grip a corresponding surface of a shank in a locked condition of said fastener system;

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a compression ring including an inner ribbed surface defining peaks and valleys corresponding to said peaks and valleys of said collet member;

the linear fastener system having a locked condition wherein said peaks of said collet member and said peaks of said compression ring are in confronting alignment, and an unlocked condition wherein said peaks of said collet member are disposed in said valleys of said compression ring.

Support for new claim 26 can be found in the Application with at page 9, lines 7-17; page 15, lines 11-21; page 16, lines 7-15, and with reference to FIGS. 2 and 3.

Accordingly, Applicants assert that no new matter has been added by new claim 26.

Applicants further assert that claim 26 is not taught or suggested by the references of record. Specifically, the references of record fail to teach or suggest a linear fastener system having "a locked condition wherein said peaks of said collet member and said peaks of said compression ring are in confronting alignment, and an unlocked condition wherein said peaks of said collet member are disposed in said valleys of said compression ring," as recited in new claim 26. Accordingly, Applicants respectfully request early and favorable indication of allowance with respect to new claim 26.

#### **Rejoinder of Withdrawn Claims**

Claim 1 was indicated to be a generic claim. Upon allowance of claim 1, Applicants respectfully request that withdrawn claims 6-9, 11, 12, 15, 16, and 18 be rejoined in this application.

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**Conclusion**

In view of the foregoing amendments to the claims and the remarks set forth herein, Applicants believe this case is in condition for allowance and respectfully request allowance of the pending claims. If the Examiner believes any issue requires further discussion, the Examiner is respectfully asked to telephone the undersigned attorney so that the matter may be promptly resolved. The Examiner's prompt attention to this matter is appreciated.

Applicants are of the opinion that a fee of \$50 is due as a result of this amendment for an additional claim in excess of 20 claims. If any additional charges or credits are necessary to complete this communication, please apply them to Deposit Account No. 23-3000.

Respectfully submitted,

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